

CLAIMS

What is claimed is:

1. A dry-cleaning system, comprising:

5 a first storage vessel for containing a dry-cleaning medium;

a second storage vessel for containing the dry-cleaning medium;

10 a cleaning vessel in which substrates disposed therein are mechanically agitated in the dry-cleaning medium;

15 a compressor for selectively establishing pressure differentials between any two of the first storage vessel, the second storage vessel, and the cleaning vessel;

configurable conduits selectively interconnecting the first storage vessel, the second storage vessel, and the cleaning vessel.

20 2. The system of claim 1, wherein the cleaning vessel comprises a rotatable basket in which the substrates are agitated.

25 3. The system of claim 1, wherein the configurable conduits comprise fluid conduits for selectively conveying the dry-cleaning medium between the first storage vessel, the second storage vessel, and the cleaning vessel, wherein at least one conduit, interconnecting the first storage vessel and the cleaning vessel, is provided as a heat transfer coil in the
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cleaning vessel for enabling the transfer of latent heat from the dry-cleaning medium to the interior of the cleaning vessel.

5 4. The system of claim 1, wherein first storage vessel is maintained at a temperature below that of the second cleaning vessel.

10 5. The system of claim 1, wherein the first storage vessel is adapted for pressure equalization between the first storage vessel and the cleaning vessel.

15 6. The system of claim 1, wherein the second storage vessel is adapted for liquid transfer between the second storage vessel and the cleaning vessel.

20 7. The system of claim 1, wherein the configurable conduits comprise a conduit for enabling the transfer of gaseous dry-cleaning medium from the cleaning vessel into a lower portion of the first storage vessel to facilitate thermal transfer between the gaseous dry-cleaning medium and liquid dry-cleaning medium in the first storage vessel.

25 8. The system of claim 1 further comprising a vent for enabling the selective transfer of gas from the interior of the cleaning vessel into the atmosphere.

30 9. The system of claim 1, further comprising a control circuit for enabling the automatic control of the

compressor and the configurable conduits, thereby controlling the flow of the dry-cleaning medium throughout the system.

5 10. The system of claim 1, further comprising a trim heater in conjunction with the second storage vessel for selectively heating the contents thereof.

10 11. The system of claim 1, further comprising a cooling element in conjunction with the first storage vessel for selectively cooling the contents thereof.

12. A method of operating a dry-cleaning system, comprising:

15 disposing substrates to be dry-cleaned into a cleaning vessel;

 evacuating air and water vapor from the interior of the cleaning vessel to the atmosphere;

20 equalizing the pressure between a first storage vessel containing a dry-cleaning medium and the cleaning vessel;

 conveying the dry-cleaning medium from a second storage vessel to the cleaning vessel;

 agitating the substrates in the cleaning vessel;

25 conveying liquid dry-cleaning medium from the cleaning vessel to the second storage vessel;

 evacuating gaseous dry-cleaning medium from the cleaning vessel to the first storage vessel; and

30 raising the cleaning vessel internal pressure to atmospheric pressure by admitting air.

13. The method of claim 12, wherein equalizing the pressure comprises selectively operating a compressor and valves associated with conduits interconnecting the first storage vessel and the cleaning vessel.

14. The method of claim 12, wherein conveying the dry-cleaning medium comprises selectively operating a compressor and valves associated with conduits interconnecting the second storage vessel and the cleaning vessel.

15. The method of claim 12, wherein conveying liquid dry-cleaning medium comprises selectively operating a compressor and valves associated with conduits interconnecting the second storage vessel and the cleaning vessel.

16. The method of claim 12, wherein evacuating gaseous dry-cleaning medium comprises selectively operating a compressor and valves associated with conduits interconnecting the first storage vessel and the cleaning vessel.

17. The method of claim 12, wherein agitating comprises agitating the substrates in the cleaning vessel through rotation of a rotatable basket disposed within the cleaning vessel.

18. The method of claim 12, wherein evacuating gaseous dry-cleaning medium further comprises conducting the gaseous dry-cleaning medium through a heat exchanging conduit disposed within the cleaning vessel.

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19. The method of claim 12, wherein evacuating gaseous dry-cleaning medium further comprises conducting the gaseous dry-cleaning medium through an aperture into a lower portion of the first storage vessel to enable heat transfer from the gaseous dry-cleaning medium to dry-cleaning medium already disposed in the first storage vessel.

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